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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,635	11/13/2003	Kazuhisa Yamamoto	YAO-3750US5	2129
23122	7590	09/12/2006	EXAMINER	
RATNERPRESTIA			NGUYEN, DUNG T	
P O BOX 980			ART UNIT	PAPER NUMBER
VALLEY FORGE, PA 19482-0980			2828	

DATE MAILED: 09/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/712,635	YAMAMOTO ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Dung (Michael) T. Nguyen	2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2006.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 78,80,81,87,89,90,93 and 97 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 78,80,81,87,89 and 90 is/are rejected.
- 7) ☒ Claim(s) 93 and 97 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>07/03&amp;08/09, 2006</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 78, 80, 87, and 89 are rejected 35 U.S.C. 103(a) as being unpatentable over Asami et al. (5415978) in view of Gupta (5682398).

With respect to claims 78 and 87, Asami et al. show in Fig.2-6 a laser device, comprising:  
three laser light sources (54R, 54G, and 54B) for generating red, green and blue laser light beams (Lr, Lg, and Lb);

a modulator (58R, 58G, and 58B) for changing an intensity of each of the laser light beams; and

a deflector (68) for changing a direction of each of the laser light beams,  
wherein at least one of the three laser light sources is formed of a semiconductor laser (102) for radiating laser light and an optical wavelength conversion element (110) having periodic domain inverted structures (column 19, lines 26-30) for generating a harmonic wave (column 6, lines 12-15).

Asami et al. lack the semiconductor laser is wavelength locked.

Gupta teaches the semiconductor laser is wavelength locked (col.2, l.48-59).

it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Asami et al. what is taught by Gupta to lock the wavelength of the semiconductor laser for feedback (col.2, l.54-56).

With respect to claims 80 and 89, Gupta discloses in Fig.1 and col.2, l.48-59 a single mode fiber for conveying laser light to the wavelength conversion element 22 (frequency doubling crystal).

Claims 81 and 90 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asami et al. (5415978) in view of Gupta (5682398) and further in view of Nitta (5590145).

With respect to claims 81 and 90, Asami et al. and Gupta disclose all limitations of the claims 78 and 87 except for the semiconductor laser is a distributed feedback type semiconductor laser; and the laser light source further comprises a semiconductor laser amplifier for amplifying the laser light from the distributed feedback type semiconductor laser.

Nitta teaches in Fig. 1 the semiconductor laser (1) is a distributed feedback type semiconductor laser; and the laser light source further comprises a semiconductor laser amplifier (3) for amplifying the laser light from the distributed feedback type semiconductor laser (column 3, lines 26-64).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Asami et al. and Gupta what is taught by Nitta to employ a semiconductor laser being able to switch the output laser light between TE and TM mode (polarization plane) and a semiconductor laser amplifier for amplifying the semiconductor laser

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output light to minimize the optical losses (column 1, lines 56-67; column 2, lines 1-3; and column 3, lines 26-64).

### *Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

### *Allowable Subject Matter*

Claims 93 and 97 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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The following is a statement of reasons for the indication of allowable subject matter:

Asami et al. and Sanford et al. (4925263) prior art fail, taken singly or combined, to teach the limitations of the optical wavelength conversion element waveguide width and thickness are each 40um or greater. Asami et al. only teach the optical wavelength conversion element waveguide (column 19, lines 26-30) but silence the optical wavelength conversion element waveguide width and thickness are each 40um or greater. Whereas, Sanford et al. teach the optical wavelength conversion element waveguide width and thickness are 2.5um and 0.55um (column 2, lines 30-34) which do not meet the limitations of the recited claims.

### Communication Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung (Michael) T Nguyen whose telephone number is (571) 272-1949. The examiner can normally be reached on 8:30 - 17:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Min Harvey can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.

Michael Dung Nguyen

  
ARMANDO RODRIGUEZ  
PRIMARY EXAMINER